REMARKS

In the Office Action mailed on May 16, 2006, the Examiner took the following action: (1) rejected Claims 1-40 as not falling within the statutory classes listed in 35 U.S.C. § 101, (no tangible result); (2) rejected Claims 8-11, 13, and 31-36 as not falling within the statutory classes listed in 35 U.S.C. § 101, (functional descriptive material, i.e. software/computer program); and (3) rejected Claims 1-7, 18-22, 30 and 40 as not falling within the statutory classes listed in 35 U.S.C. § 101, (directed to data signals). Applicants respectfully request reconsideration and allowance of the subject application.

The Examiner is thanked for withdrawing 35 U.S.C. § 103(a) rejections from the prior Office Action. Claims 1-40 are pending in this application.

REJECTIONS UNDER 35 USC § 101

Non-tangible result (abstract idea)

Claims 1-40 stand rejected under 35 U.S.C. § 101 as allegedly being directed to non-statutory subject matter. In making out the rejection of these claims, the Office argues that:

> Claims 1-40 are directed to a hashing method of generating/comparing plurality of sub-hash keys. . . . The claimed steps do not result in a tangible result. Claims 1-40 are rejected as being directed to an abstract idea (i.e., producing non-tangible result). . . .

(Office Action of May 16, 2006, page 3). Applicants respectfully disagree with the Office's assertion that Claims 1-40 are merely abstract ideas and fail to recite any real-world or tangible results.

The Federal Circuit held in AT&T that an abstract idea, *by itself*, is unpatentable subject matter under § 101. *AT&T Corp. v. Excel Communications, Inc.*,

172 F.3d 1352, 1355 (1999) (pointing out that laws of nature, natural phenomena, and abstract ideas have generally been identified by the Supreme Court as unpatentable subject matter) (emphasis added). If such an idea is taken out of the abstract and employed in some type of process that achieves a "new and useful end", however, the *process is* patentable subject matter, even if the idea by itself would not be. *Id.* at 1357. Thus, the relevant inquiry under § 101 becomes: Is the idea being applied to achieve a useful end? *Id.* If so, then the § 101 threshold is satisfied. *Id.*

In *AT&T*, the invention was designed to operate in a telecommunications system with multiple long-distance service providers. The system contained local exchange carriers ("LECs") and long-distance service (interexchange) carriers ("IXCs"). The LECs provided local telephone service and access to IXCs. Each customer had an LEC for local service and selected an IXC, such as AT&T or Excel, to be its primary long-distance service (interexchange) carrier or PIC. The system involved a three-step process when a caller made a direct-dialed (1+) long-distance telephone call: (1) after the call was transmitted over the LEC's network to a switch, and the LEC identified the caller's PIC, the LEC automatically routed the call to the facilities used by the caller's PIC; (2) the PIC's facilities carried the call to the LEC serving the call recipient; and (3) the call recipient's LEC delivered the call over its local network to the recipient's telephone.

When a caller made a direct-dialed long-distance telephone call, a switch (which could be a switch in the interexchange network) monitored and recorded data related to the call, and generated an "automatic message account" ("AMA") message record. This contemporaneous message record contained fields of information such as the originating and terminating telephone numbers, and the length of time of the call. These message

records were then transmitted from the switch to a message accumulation system for processing and billing.

Because the message records were stored in electronic format, they could be transmitted from one computer system to another and reformatted to ease processing of the information. Thus the carrier's AMA message subsequently was translated into the industry-standard "exchange message interface," forwarded to a rating system, and ultimately forwarded to a billing system in which the data resided until processed to generate, typically, "hard copy" bills which were mailed to subscribers.

The invention at issue in this case called for the addition of a data field into a standard message record to indicate whether a call involved a particular PIC (the "PIC indicator"). This PIC indicator could exist in several forms, such as a code which identified the call recipient's PIC, a flag which showed that the recipient's PIC was or was not a particular IXC, or a flag that identified the recipient's and the caller's PICs as the same IXC. The PIC indicator therefore enabled IXCs to provide differential billing for calls on the basis of the identified PIC.

One of the claims at issue – claim 1-- read as follows:

> A method for use in a telecommunications system in which interexchange calls initiated by each subscriber are automatically routed over the facilities of a particular one of a plurality of interexchange carriers associated with that subscriber, said method comprising the steps of:
>
> generating a message record for an interexchange call between an originating subscriber and a terminating subscriber, and
>
> including, in said message record, a primary interexchange carrier (PIC) indicator having a value which is a function of whether or not the interexchange carrier associated with said terminating subscriber is a predetermined one of said interexchange carriers.

In looking at the subject matter of this claim and finding the claim to pass muster under 35 U.S.C. § 101, the Court looked to the *specification* and commented as follows:

> In this case, Excel argues, correctly, that the PIC indicator value is derived using a simple mathematical principle (p and q). But that is not determinative because AT&T does not claim the Boolean principle as such or attempt to forestall its use in any other application. It is clear from the written description of the '184 patent that AT&T is only claiming a process that uses the Boolean principle in order to determine the value of the PIC indicator. The PIC indicator represents information about the call recipient's PIC, a useful, non-abstract result that facilitates differential billing of long-distance calls made by an IXC's subscriber. Because the claimed process applies the Boolean principle to produce a useful, concrete, tangible result without pre-empting other uses of the mathematical principle, on its face the claimed process comfortably falls within the scope of § 101.

Here, the Court looked at the specification and found that the environment and use of the PIC indicator – that of providing differential billing – provided a useful, concrete and tangible result. That result, however, was not specifically recited in the claim. Rather, it was described in the specification.

Likewise, in the present case, the specification provides a description of the utility and tangibility of the recited subject matter. Specifically, page 6, line 19, to page 7, line 21, instruct as follows:

> When a user requests to access an object or, an access control component compares the SIDs [security identifier] of the user's security token to the SIDs of the ACL [access control list] corresponding to the requested object. If any one of the SIDs of the user's security token matches any one of the SIDs of the ACL corresponding to the requested object, then the ***user's ability to access the object may be limited*** (subject possibly to other matching SIDs for the user) in accordance with an access mask contained within the ACE [access control elements] that includes the matching SID. The access mask contained within an ACE identifies the ***types of accesses*** to the object that are allowed by that ACE (***e.g., read, write, open, close, etc.***), and the types of accesses identified in the access masks can vary by object. ***The access mask of the ACE can thus be compared to the type of access being requested by the user to determine***

> ***whether the ACE will allow the access***. The use of ACLs and security tokens to perform access control is well-known. However, a novel and improved hashing structure, described in more detail below, is used by operating system in determining whether any of the SIDs matches any of the SIDs.
>
> The improved hashing structure is described herein primarily with reference to an access control system. . . . . By way of example, the improved hashing structure described herein can be used with an operating system object manager (e.g., the Windows® NT object manager) to look up an object from its name, with a local security authority (LSA) to look up the locally unique value of a loadable privilege name, for the LSA to determine if a specific SID is in a SID cache, for the LSA to map a name to a SID, for the LSA to look up a trusted domain object (TDO) from a TDO list, etc..

(Emphasis added.) As additional support, the specification at page 9, lines 14-17 instruct as follows:

> The use of multiple sub-hashes quickly creates a hash result in a memory-efficient manner. By hashing the access control SID the number of comparisons of the access control SID to security token SIDs can be greatly reduced.

Accordingly, in this excerpt as throughout the document, it is evident that the claimed subject matter has a specifically described useful, concrete and tangible result and application.

Functional descriptive material

Claims 8-11, 13, and 31-36 stand rejected under 35 USC § 101 as being directed to non-statutory subject matter, namely, functional descriptive material (i.e., software or computer program). Applicants have amended claims 8 and 31 (of which claims 9-13 and 32-36 depend, respectively).

The MPEP states: "When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function

of the descriptive material to be realized. *See In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory)." MPEP § 2106.01.

Claim 8 has been amended by inserting "implemented in hardware" after "hashing architecture," thus overcoming the functional descriptive material rejection. Claim 31 has been amended by inserting "computer-based" before "system," thus overcoming the functional descriptive material rejection. Therefore, Applicants respectfully request reconsideration and withdrawal of this rejection.

Computer readable media that includes data signals

Claims 1-7, 18-22, 30, and 40 stand rejected under 35 USC § 101 as being directed to non-statutory subject matter, namely, computer readable media that includes data signals. Applicants reiterate the arguments provided above for these specific claims regarding tangible matter in addition to presenting the following additional arguments.

The MPEP states "a claimed computer-readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory." MPEP § 2106.01(I). Further, data structures are defined as "a physical or logical relationship among data element, designed to support specific data manipulation functions." MPEP § 2106.01, citing The New IEEE Standard Dictionary of Electrical and Electronics Terms, 308 (5th ed. 1993).

Applicants have amended Claim 1 and 19 to include "and providing an indication whether the values match", thus Claims 1 and 19 are now believed to be in allowance. Further, Claims 18, 30, and 40 all depend from claims 14, 23, and 38, respectively, and

thus are believed to be allowable because they are dependent on a statutorily proper base claim.

In view of the above discussion, Applicants respectfully submits that claims 1-40 comply with the patentability requirements of § 101 and that the § 101 rejections should be withdrawn.

Conclusion

Claims 1-40 are in condition for allowance. Applicants respectfully request reconsideration and issuance of the subject application. If there are any remaining matters that may be handled by telephone conference, the Examiner is kindly invited to telephone the undersigned.

Respectfully Submitted,

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